

SUPPORT FOR THE AMENDMENTS

This Amendment cancels Claims 4-5, 15 and 20; and amends Claims 1, 6-7, 11, 16-19 and 21-22. Support for the amendments is found in the specification and claims as originally filed. In particular, support is found in canceled Claim 15. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 1, 3, 6-8, 10-12, 14, 16-19 and 21-22 will be pending in this application. Claims 1, 6, 7, 11, 16, 17, 18, 19, 21 and 22 are independent.

REQUEST FOR WITHDRAWAL OF FINALITY OF FINAL REJECTION

Applicants respectfully request that the Examiner withdraw the finality of the Final Rejection dated August 11, 2005, because the Final Rejection was improperly made as the first Office action following an Amendment that added a previously unexamined limitation to the claims.

In particular, the Final Rejection was made in response to the Amendment filed, with a Request for Continued Examination, on May 2, 2005. The Amendment added to independent Claims 1, 4, 6-7, 11 and 16-22 the previously unexamined limitation that "said core diameter is a diameter of a solid core of material extending out of said one or more chip discharging grooves". Support for this limitation is found, not in the claims, but in the specification at [0043] and in Figure 3.

Pursuant to M.P.E.P. § 706.07(b):

The claims of a new application may be finally rejected in the first Office action in those situations where (A) the new application is a continuing application of, or a substitute for, an earlier application, and (B) ***all claims of the new application (1) are drawn to the same invention claimed in the earlier application***, and (2) would have been properly finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. M.P.E.P. § 706.07(b) (emphasis added).

Because the claims in the Amendment filed May 2, 2005, contained a previously unexamined limitation, the claims in the Amendment filed May 2, 2005, are **NOT** "drawn to the same invention claimed in the earlier application".

Thus, making the first Office action following the Amendment filed May 2, 2005, a final rejection is improper.

Accordingly, Applicants respectfully request that the finality of the Final Rejection dated August 11, 2005, be withdrawn.

REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

The present invention provides a hole forming tool whose tool life is increased without degrading cutting accuracy. Specification at [0006]. A main body of the hole forming tool is constructed of a cemented carbide which comprises 10 ± 2 wt % Co, 0.65 ± 0.25 wt % Cr, WC for a balance thereof, and inevitable impurities Specification at [0024].

Claims 1, 3-8, 10-12, and 14-22 are rejected under 35 U.S.C. §112, first paragraph. The Final Rejection asserts at page 2, lines 3-10, that the definition of "core diameter" included in the pending claims is not supported by the specification. Specifically, "Nowhere in the specification was found a discussion of a 'solid core material.'" However, the core diameter, labeled as element 14 on Figure 3, is shown in Figure 3 to be a solid core. Accordingly, the definition of "core diameter" is supported in the specification by both [0042] **and** Figure 3. Because Claims 1, 3, 6-8, 10-12, 14, 16-19, 21, and 22 are in compliance with all requirements under 35 U.S.C. §112, first paragraph, the rejection under 35 U.S.C. §112, first paragraph, should be withdrawn.

Claims 1, 3-8, 10-12, and 14-22 are rejected under 35 U.S.C. §103(a) over the Tool and Manufacturing Engineer's Handbook, pages 9-14 to 9-47 ("Engineer's Handbook") in view of U.S. Patent No. 4,583,888 ("Mori") and U.S. Patent No. 4,971,485 ("Nomura").

Engineer's Handbook discloses various twist drills, which can contain cobalt and which can be plated with chromium. Engineer's Handbook at page 9-15 to 9-16.

However, Engineer's Handbook fails to suggest the limitation of independent Claims 1, 6, 7, 11, 16, 17, 18, 19, 21 and 22 that "a main body of said hole forming tool is constructed of a cemented carbide which comprises 10 ± 2 wt % Co, 0.65 ± 0.25 wt % Cr, WC for a balance thereof, and inevitable impurities".

The Advisory Action asserts:

Nomura shows the use of Co which is known to combine with tungsten carbide to form intermetallic compounds for example in his table 1 and at col. 9, ln. 29+. Cr is known for wear resisting for example in Mori col. 12, ln. 65. Nothing of record shows that the claimed ranges do more than adjust the durability and wear of the drill to an optimized point using known techniques in alloys. Advisory Action dated November 30, 2005, at Continuation of 11.

However, Mori at column 12, line 65, merely discloses "central axis, to an outermost peripheral end point (P_3)".

Mori discloses a cemented carbide drill bit. Mori at title. Mori discloses:

The present drill bit itself is made of known cemented carbide and is naturally superior to conventional high speed steel drills in hardness, wear resistance, and heat resistance. Mori at column 4, lines 26-29.

However, Mori is silent about Co and Cr, and fails to suggest the limitation of independent Claims 1, 6, 7, 11, 16, 17, 18, 19, 21 and 22 that "a main body of said hole forming tool is constructed of a cemented carbide which comprises 10 ± 2 wt % Co, 0.65 ± 0.25 wt % Cr, WC for a balance thereof, and inevitable impurities".

Nomura discloses a cemented carbide drill formed by a hard dispersed phase of WC and a B-1 type solid solution, and a bond metal phase of an iron family metal. Nomura at title; abstract. Nomura discloses

The composition of the hard dispersed phase is expressed as $(W_aM_b)(C_xN_y)$, where *M represents Ti, or two or more metals, including Ti but excluding W, selected from the group IVa, Va and VIa* of the periodic table, and a, b, x and y represents molar fractions which are defined by relational expressions of $a + b = 1$, $x + y = 1$, $x > 0$, $y \geq 0$ and $b \geq 0.4$. Nomura at abstract, lines 3-9.

However, Nomura fails to disclose the relative proportions of Ti and the metal selected from the group VIa when both are present.

For at least this reason, Nomura fails to suggest the limitation of independent Claims 1, 6, 7, 11, 16, 17, 18, 19, 21 and 22 that "a main body of said hole forming tool is constructed of a cemented carbide which comprises 10 ± 2 wt % Co, 0.65 ± 0.25 wt % Cr, WC for a balance thereof, and inevitable impurities".

The specification discloses that composition of the cemented carbide ensures the rigidity of the hole forming tool of the present invention.

[0023] According to a sixth characteristic, the main body of said hole forming tool is constructed of a cemented carbide which comprises 10 ± 2 wt % Co, 0.65 ± 0.25 wt % Cr, WC for a balance thereof, and inevitable impurities.

[0024] By using the above described cemented carbide, in which rigidity is high, as the material, the rigidity of the main body of the hole forming tool is ensured. Specification at [0023] - [0024].

Because the cited prior art fails to suggest the limitation of independent Claims 1, 6, 7, 11, 16, 17, 18, 19, 21 and 22 that "a main body of said hole forming tool is constructed of a cemented carbide which comprises 10 ± 2 wt % Co, 0.65 ± 0.25 wt % Cr, WC for a balance thereof, and inevitable impurities", the rejection under 35 U.S.C. § 103(a) should be withdrawn.

Applicants respectfully request that the Examiner acknowledge consideration of the references cited in the Information Disclosure Statement filed September 8, 2003, by initialing the associated Form PTO-1449. For the Examiner's convenience, a copy of the Form PTO-1449 and the date-stamped filing receipt are attached.

In view of the foregoing amendments and remarks, Applicant respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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Attached:

Form PTO-1449 from IDS filed September 8, 2003, and date-stamped filing receipt

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